Karnataka State Akkamahadevi Women's University, Vijayapura

THE PROPOSAL SUBMITTED FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

In

PHYSICAL EDUCATION

On

A COMPARATIVE STUDY ON SELECTED MOTOR FITNESS COMPONENTS, HEALTH RELATED FITNESS AND PSYCHOLOGICAL VARIABLES AMONG FOOTBALL AND HOCKEY PLAYERS

SUBMITTED BY

Sowjanya. m

Research scholar (Ph.D)

RESEARCH GUIDE

Dr. Sakpal Hoovanna
Professor
Department of sports physical education and science
Karnataka State Akkamahadevi Women's University
Vijayapura.

2023-24

INDEX

CHAPTER	CONTENT	PAGE NO.
I	INTRODUCTION	3-4
	STATEMENT OF THE PROBLEM	4
	OBJECTIVES OF THE STUDY	4
	SIGNIFICANCE OF THE STUDY	5
	DELIMITATION	5
	LIMITATION	5-6
	HYPOTHISIS	6
	DEFINITION OF THE TERM	7
II	REVIEW OF LITERATURE	7-12
III	METHODOLOGY	13-15
	RESEARCH GAP	15
IV	REFERENCES	16
	OTHER	

INTRODUCTION

Sports are very essential for every human life which keeps them fit and fine and physical strength. It has great importance in each stage of life. It also improves the personality of people. Sports keep our all organs alert and our hearts become stronger by regularly playing some kind of sport following the civil war when many states opted to pass laws that required schools to incorporate a substantial physical education component into their curriculums. But it was not till 1970 that an amendment was made to the Federal Education Act that allowed women from high school and college to compete in athletic competitions The brief history of physical education would start in just about 1820 when schools focused on gymnastics, hygiene training and care and development of the human body. By the year 1950, over 400 institutes had introduced majors in physical education. The Young Men's Christian Association launched its very first chapter in 1851 and focused on physical activities. Colleges were encouraged to focus on intramural sports particularly track, field and football. But physical education became a formal requirement

Modern football originated in Britain in the 19th century. Though football is a game which requires very fast body movement and modern football game is characterized by fast movements, which become prominent in short and long sprint, explosive reaction, jump and quick changes of direction (committe et al.,2001)

The modern game of hockey emerged in England in the mid-18th century, hockey is the world's most popular sport played in practically every nation at varying levels of competence. Hockey is a sport of speed and power. In hockey a player require an appropriate level of health related physical fitness and motor fitness to play these sports (reilly, 1995).

Is defined as "the scientific study of behaviour and mental processes"as a field of experimental study began in 1854 in Leipzig, Germany when Gustav Fechner created the first theory of how judgments about sensory experiences are made and how to experiment on them. Fechner's theory, recognized today as Signal Detection Theory foreshadowed the development of statistical theories of comparative judgment and thousands of experiments based on his ideas (Link, S. W. Psychological Science, 1995). Later, 1879, Wilhelm Wundt founded in Leipzig, Germany, the first Psychological laboratory dedicated exclusively to psychological research.

(HRF) is theoretically defined as a multidimensional construct containing the components cardio respiratory endurance, muscular strength, muscular endurance and flexibility and body composition.

A motor skill is a function that involves specific movements of the body's muscles to perform a certain task. These tasks could include walking, running, or riding a bike. In order to perform this skill, the body's nervous system, muscles, and brain have to all work together.

The six **components** of **motor** skills related to **fitness** are agility, balance, coordination, power, reaction time and speed, according to Glencoe.

STATEMENT OF THE PROBLEM

The purpose of this study is to comparison on selected motor fitness components, health related fitness and psychological variables among football and hockey players.

OBJECTIVE OF THE STUDY

1. To compare selected motor Components, health related fitness and psychological variables among football and hockey players.
2. To know the differences in motor fitness components, health related fitness and psychological variables among football and hockey players.
3. To know the relations between football and hockey players in psychological variables, motor fitness components, and health related fitness.
4. To know the relations between the players playing positions goal keepers, defenders, center and center forward between foot ball and hockey players
5. To compare the football and hockey playing position goal keepers, defenders, center and center forward.
6. To comparing and to know the relations in between football players of playing positions.

7. To comparing and to know the relations in between hockey players of playing positions

SIGNIFICANT OF THE STUDY

1. The result of the study helps to know the differences between football and hockey players in motor fitness components, health related fitness and psychological variables.
2. The study helps to improve the psychological aspects among football and hockey players.
3. The study helps football and hockey players to improve their fitness the study helps to know the importance of health related fitness.

DE-LIMITATION

1. This study is confined only university level football and hockey players from selected region,
2. The subjects for the study is delimited to the 130 (65 from each game)
3. The age group of the subjects ranged from 17 to 28 years,
4. The study is only delimited to only selected variables,
5. The comparison is delimited with only selected football and hockey positions goal keepers,center,center back and midfielder,
6. The regions are only delimited with Bangalore and Mysore,
7. This study is delimited 10 subject to goal keepers (5 each from both game) 40 subject from center players (20 each from both game) 40 subject from center back players (20 each from both game) 40 subject from midfielders (20 each from both game)

LIMITATIONS

1. As the number of subjects is selected for the present study are more the tests will to be conducted on different days.

2. No specific motivation techniques will be use to encourage the subjects to attain their maximum performance during testing.
3. Moods and Health status of the subjects during the performance are beyond the control of the investigator.
4. Life style of the subjects affecting their nutritional status is beyond the control of the investigator.
5. Climate condition and environmental factors is beyond the control of the investigator.
6. The students are from different social, cultural and economic status which is considered as a limitation for this study.
7. The responses of the subjects to the statements in the questionnaire will depend upon various factors such as understanding of the statements, seriousness and sincerity of the subjects.

HYPOTHESIS

1. There is a significant deference between football and hockey players in motor fitness components, health related fitness, and psychological variables.
2. There is a difference between foot ball and hockey players in motor components
3. There is a difference between football and hockey players in psychological variables
4. There is a difference between football and hockey players in health related fitness
5. There is a significant deference between hockey and football players of there playing position in motor components , psychological variables , and health related fitness
6. There is a difference between hockey forward and football forward players in motor components, health related fitness, and psychological variables.
7. There is a difference between hockey goal keepers and football goal keepers in motor components, health related fitness, and psychological variables.
8. There is a difference between hockey defense players and football defense players in motor components, health related fitness, and psychological variables.

9. There is a difference between hockey midfield players and football midfield players in motor components, health related fitness, and psychological variables.
10. There is a position relation between hockey and football players of selected motor fitness, psychological variables and health related fitness among their playing position.

DEFINITION OF THE TERMS

Motor fitness components

A fitness component is simply a way of identifying a certain part of a person's fitness – essentially you are labeling a subset of changes that you want to occur as a component. For example, if a client wants to be more flexible I'd work on the 'flexibility' component of their fitness.

Psychology

In 1884 James Sully defined psychology as the science of the 'inner world' as distinguished from physical science which study the physical phenomena.

Health related fitness.

Health-related fitness (HRF) is theoretically defined as a multidimensional construct containing the components cardiorespiratory endurance, muscular strength, muscular endurance, flexibility and body composition.

REVIEW OF RELATED LITERATURE

1. **Bhattacharjee, Subhashish (2003):** He studied about Motor Fitness components and Anthropometry measurements among Football players in relation to positional play. He has taken **60** Football players as a subject for his study. the subject was selected in west Bengal and Odessa who were participated in the National level football Championship, samples were divided into three groups **on their position diffenders-20, midfilders-20, attackers-20** on the **age group was ranged between 23 to 28 years**, the subjects was belonging to different socio-economic condition to measure motor fitness variables and anthropometric variable. In the Motor Fitness researcher has taken **speed, Agility, power and Cardio-respiratory endurance.** finally the researcher obtained the score after conducting test from three group had collected

according to the norms and data was treated with "**LSD" test** and to find the differences of **mean and analysis of variance set at 0.05 % level**, the result of the study was no significant different in among defenders, midfielders and attackers of football in anthropometric measurements why because in football game according to the nature of the game similar body category players only selected this game to participates. the study was showed in motor fitness components **(Speed, agility & Power**) was no significant difference among the three groups defenders, midfielders and attackers because researcher said there may be similar types of training scheduled, participation, practice and training load was same for all three lines of football players, due to the above reason there was no significance difference in motor fitness component. In Cardio respiratory endurance there was significant difference between all three groups midfielders and attackers, because the playing position of the players is should be a changes in their role midfielders and attackers have more cardio respiratory endurance then defenders, why because that two positions are constantly move from one place to other and defender play there specific position so t**here was significant difference found between in the three groups.**

2. **Chester Manuel (2011):** An Analysis of selected physical psychomotor psychological and performance variables among men hockey players in different playing positions. Purpose of the study was to compare physical and psychomotor, psychological performance from men hockey players in different playing position. In this study researcher used **45 male Hockey players was selected at random method** from the **affiliated collages of Madhurai Kamaraj university who represented their colleges in the inter collegiate hockey tournament in the year 2008-2009, the age group between 17 to 22 years,** the researcher divided the subjects in to 3 groups based on their paying position such as defence, Midfield and forward players. The researcher used variables are physical variables, psychomotor variables, psychological variables and performance variables. in physical variables **agility, speed, strength endurance and flexibility** were used. In psychological variables cognitive and somatic anxiety, self-confidence and achievement. **The level of significance was set at 0.05 level** and product moment co-relation, multiple co-relation and multiple regression, this statistical was used to analyse the data, concluded the result with there was a significance difference between defence, mid-field and forward players of hockey in physical variables, there was no significance difference in somatic anxiety

self-confidence and achievement motivation between defence, mid-field and forward players.

3. **Deepika Dayalu (2019):** A comparative study of Anthropometric measurement and motor fitness components among Cricket, Badminton and Volleyball of University players. The purpose of the study was comparison between anthropometric measurement and motor fitness among Cricket Badminton & Volleyball players. **Total 300 subject were selected in this study in purposive method, in that 100 from Badminton, 100 from Cricket and 100 from Volleyball who was participated in inter collegiate, the age group between 17 to 27 years**, inter coaching centre academies from the kingdom of Uttar Pradesh. In this study researcher used anthropometric and motor fitness variables. in motor fitness are agility, leg explosive power, balance, coordination and reaction time. For this study researcher **F- test and significance of 0.05 level** statistical technique were used, Finally the researcher concluded with result that there was a significant difference in Anthropometric measurements and motor fitness variable among Cricket, Badminton and Volleyball of University players.

4. **Dhobi Vishal R (2018):** He studied about motor fitness variables among west zone players of Basket ball, Handball and Volleyball players. He **taken 120 sample** to achieve the study, he has selected randomly **40 Basketball, 40 Handball and 40 Volleyball players** as a subject in the **age group 15 to 18 years** as per the school record, 20 CBSC schools male players selected from various team to measure motor fitness variables, physiological variable and body composition. In the motor fitness researcher has taken speed, explosive shoulder strength, leg strength, agility, and endurance, finally the researcher obtained the score after conducting test from three group had collected according to the norms and the data was treated with **"F" test** and to find the differences of mean and **analysis of variance set at 0.05 % level** and the result of the study was significant differences between Basket ball, Hand ball and Volleyball players.

5. **Golagani Venkateswara Rao & Dr.N.Vijaymaohan (2022):** Those are studied on Analysis of selected Motor Fitness and Anthropometric variables on Kabaddi playing ability of junior boys and junior girls Kabaddi players. The purpose of the study was

analyse the relationship between the selected motor fitness and anthropometric variables such as resting pulse rate, breath holding time, height, leg length, speed, agility and explosive strength on Kabaddi playing ability of junior state boys and girls Kabaddi players. For this study **60 boys and girls Kabaddi players who were represented** for varies district players and participating in junior state Kabaddi tournaments held at Andrapradesh state during the year 2021-22 was selected as a subject. To find out the significance differences correlation used **t-test employed and significant level set at 0.05 level**. On the result concluded from the statistical analysis that in the motor fitness and anthropometric variable components use to Kabaddi playing ability performance for state junior boys Kabaddi players are better than state junior girls kabaddi players.

6. **Kaur, Rajinder (2016):** Studied about comparative study of selected anthropometric, psychological and physiological variables between women Handball and Basketball players**. He taken 220 females as a subject among that 110-Handball, 110-Basketball** Inter Collegiate & State level players to the study, **the age group was between 17 to 24 years**. The study was delimited Haryana, Chandigarh, Punjab States and who played Basketball and Handball in Inter Collegiate and State Championship. In psychological variables researcher has taken Blood pressure (systolic and diastolic), pulse rate, respiratory rate and anxiety. The main objective of study was compare the variables among the Handball & Basketball Women players according to the co-efficiency of Co-relation, the players was divided into 4 groups according to their previous performance, two group for Handball & Basketball State level players, two group for Basketball and Handball Inter collegiate players 50 each. The researcher used **ANOVA and T-Test was applied** to find out the significant difference among the groups, finally researcher found the result and he concluded that there was significant differences between Basketball and Handball inter collegiate and state level women players. And researcher said the reason for significant difference that Basketball players have better conditioned body then Handball players, because Basketball game is known as fastest game of world after ice Hockey, Basketball players spending more time in conditioning, participating in the game and Basketball players have ground facilities and better environment. This thinks are making their adaptive stress and hard work this causes are making them better than Handball players.

7. **Kaushik C Macwal & Dr.Kamalesh Kumar P (2008):** the tittle was effect of swimming training on selected motor fitness components among school level boys. The purpose of the study that to find out the effect of swimming training on motor fitness, **for this study total 30 subject** was selected from different schools in Ahamadabad in random sampling method, the **age group between 15 to 18 years**, they were divided in to two groups, one group was controlled and another one was experimental group. For experimental group 6 weeks training was given for the training, in motor fitness variables are speed, muscular power and abdominal strength was used for this study**. t-ratio** were applied and for the **significance level set at 0.05 level** statistic was used. And the conclusion was given by researcher that 6 weeks of training program improved the selected motor fitness variables speed, muscular power and abdominal strength of school boys.

8. **Kumar, Sanjeev (2013):** Comparative study on physical fitness between inter university male players of selected team games from the universities of northern India. The purpose of the study was to find out the significant difference between intervarsity male players of selected games are Basketball, Cricket, Football, Hockey and Kabaddi, **for this study 559 samples** was selected from different universities and -different colleges of northern part of India those who are participated in north zone inter university tournament 2009-2010 were selected as a samples from five games Basketball, Cricket, football, Hockey and Kabaddi. Researcher **used t-test and F-ratio** to find out the significant differences and the **significance level set at 0.05 level** on the result was there was a significance difference between the selected universities on Punjab University, Maharshi dhayanand University, Kurukshethra University, Gurunank Dev University, Punjabi University and Delhi University among five games was founded.

9. **Patrudu, M,S,N (2017) :** He studied compression of health related physical fitness components and physical variable among state level men Triathlon Athlete, Swimmers, Cyclist and Runners, the purpose of the study was compare the health related physical fitness components and psychological variable among state level Triathlon Athletes, Swimmers, Cyclist and Runners, **the researcher was selected 120 subject (30 each** from the four events) and researcher used health related physical

fitness like flexibility, muscular endurance, muscular strength, cardio vascular endurance and body composition. In physiological variables – resting pulse rate, breath holding time, vital capacity and atrial blood pressure. for this study researcher were used to compare the four groups one-way analysis of variance **(ANOVA) and "F" ratio was applied** to found significant. And the researcher concluded the result there was a significant different between all four group in health related physical fitness- muscular strength, muscular endurance, flexibility. Swimmers are better than the other three groups Triathlon, Cyclist and Runners. In psychological variables also researcher was found significant different between four groups Triathlon Athlete and Runners were significantly better than other two group Cyclist and Runners. Why because significant different was found the nature of four groups was different environment, different practice session, different training method and different participation of the game was causes to significant difference.

10. **P.C Krishnaswamy (2001):** He studied comparative analysis of selected physical fitness and psychological variables of Kho-Kho, Football, Basketball and Hockey men university players. **The age group between 17 to 25** years **total 240 subject was selected** from four different universities in Karnataka. Who represented the University zonal and inter university competition in the year of 1999-2000, 2000-2001 selected as subject. The researcher selected physical fitness variables and psychological variables, in physical fitness- muscular endurance, cardio respiratory endurance, flexibility, explosive power, speed and etc., In psychological variables- psychological wellbeing was taken. Researcher used the **"F"-ratio obtained was tested for significance at 0.05** level to find out the significant different. On the result was found that there was no significant difference in psychological wellbeing among Kho-Kho, Basketball, Football and Hockey players and there was significant difference in the physical fitness variables among Football, Basketball, Kho-Kho and Hockey players. Why Because researcher said in every variable test that there was a different types of practices, socio economic status, environment, food habits and ground facilities, this thing are impacting on the four game so the significant difference was happened.

METHODOLOGY

In this chapter, selection of subjects, selection of variables, selection of tools and statistical technique will be discussed.The purpose of this study is to comparison on selected motor components, health related fitness and psychological variables among football and hockey players.

SELECTION OF SUBJECTS

To achieve these purpose 130 male university level players will be selected through simple random sampling technique, subject's age group range between 18 to 27 years.

SAMPLE DESIGN

	Goal keeper	Midfielders	Forward players	Defenders	Total
Football	05	20	20	20	65
Hockey	05	20	20	20	65
Total	10	40	40	40	130

The below table show the variables**,** Test/Tools and the unit of measurement of selected motor fitness, psychological variables and health related fitness Variables will be used in this study.

MOTOR FITNESS VARIABLES				
SL.NO	**Variables**	**Test (t-test)**	**Equipments**	**Criterion Measures**
1	Speed	30 meters dash	Stop watch and cones	timing
2	Power	Standing broad jump	Mat/floor	distance
3	Agility	Shuttle run	Cones and stop watch	Timing
4	Balance	Stroke stand test	Stop watch	Based on timing
5	Coordination	Alternative hand wall toss test	Stop watch, tennis ball, wall and tape	Number of catches in 30 sec
6	Reaction time	Ruler test	1mtr long ruler	Calculation of dist,

PSYCHOLOGICAL VARIABLES			
SL .NO	**Variables**	**Test**	**Criterion Measures**
1	concentration	Grid concentration test	Point as per manual
2	Aggression	A Kumar	Point as per manual
3	Self-confidence	M. Basavanna	Point as per manual

HEALTH RELATED FITNESS VARIABLES			
SL. NO	**Variables**	**Test**	**Criterion Measures**
1	Muscular strength	Dynamic sit-up test	Number of sit ups in certain time
2	Flexibility	Sit and reach	Nearest centimetre
3	Muscular endurance	Push up	Time (30)sec

STATISTICAL TECHNIQUE

In the present study the scholar has using ‘T’ test, ANOVA, and ‘F ’ratio for testing of formulated Hypothesis of the study.

‘T’ TEST:

A Ratio that quantifies how significant the difference is between the 'means' of two groups while taking their variance or distribution into account,

ANOVA:

One-Way Analysis of Variance tells you if there are any statistical differences between the means of three or more independent groups.

CORRELATION

Reflects the strength and/or direction of the association between two or more variables,

RESEARCH GAP

In the review of literature there was a significant amount of research on selected motor fitness, psychological variable and health related fitness, in their study find out only one game of there playing position and done with comparison and relations, but there is a gap in the literature. Also there is no any study about comparison between two games of there playing positions and they didn’t find out the relation between games.

Therefore there is a need for research that specifically focuses on the relations and comparison between motor fitness components, psychological variables and health related fitness between hockey and football players, this research can inform the development of targeted interventions to promote the development of physical, psychological and health related fitness in both football and hockey players.

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"Remarks scholar proposal is corrected and kept in a board for further needful correction and approval"

Signature of
Research scholar
(sowjanya m)

signature of
Research guide
(Dr. Sakpal Hoovanna)

Remarks of the guide :

Recommendation of the department council:

Recommendation of the board of studies:

Recommendation of the board of studies: